

**DRAFT BACKGROUND NOTES FOR THE COMMITTEE ON
NATIONAL FOREST POLICY AND
FOREST (CONSERVATION) ACT.**

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AUGUST 1989

PREAMBLE: SOCIAL ROOTS OF ECOLOGICAL FAILURE

0.1 On achieving independence in 1947, India inherited an elaborate bureaucratic and legal apparatus as a legacy of British rule. Designed to subserve the needs of a colonial power, these laws and institutions were in many respects inappropriate for the very different requirements of an independent, democratic and socialist nation striving to create an egalitarian society. This discrepancy was recognized by the political leadership of the time, and in at least two core areas of social and economic life the older laws were repealed and new legislation enacted. Thus in the sector of agriculture, a major land reform programme abolished the old zamindari system and conferred proprietary rights on tens of millions of peasant cultivators. At the same time, the government vastly expanded the network of financial and technical help to farmers. Secondly, in the field of industry, the government removed the discriminatory legislation that favoured foreign companies at the expense of indigenous industry, while it strengthened labour legislation to safeguard workers' rights.

0.2 The fruits of these new laws and institutions are strikingly manifest in the impressive strides taken by the country since independence in both agriculture and industry. Unfortunately, in a third, equally critical area, that of natural resource management, the colonial framework of laws and institutions is still in place. Our public lands are still governed by nineteenth century laws which assert an absolute state monopoly over forests while sharply curtailing the age old rights of peasants and tribals. Thus the management of one fifth of our land area is governed by the

anachronistic Indian Forest Act of 1878, which even at the time of its enactment was condemned as an arbitrary and oppressive piece of legislation. Indeed, the widespread and pervasive opposition to colonial forest laws was an important element in the national movement against British rule (Guha and Gadgil, 1989).

0.3 By oversight or neglect, the colonial framework of forest administration and legislation continued to operate after 1947. At the same time, commercial pressures on forest resources were greatly intensified. However, the vast majority of our rural and tribal population are still denied a real stake in forest management, even while they continue to depend heavily on biomass resources for their sustenance. Consequently, conflicts between villagers and the forest machinery continue to play an important if largely negative part in the social life of the nation.

0.4 There are of course a complex of factors contributing to ecological degradation in the country, including the pressures of the commercial-industrial sector and a growing population. However, the part played by an anachronistic system of natural resource management in furthering these processes is often overlooked. Thus there have been two typical responses to the ecological crisis in India. One school, stressing only ecological balance, in fact favours strengthening the present, authoritarian system of forest management. The other school, concerned only with the claims of social justice, favours the abandonment of state control altogether (without replacing it with an alternate institutional structure), thereby allowing local communities full and free access to non-cultivated land (Gadgil,

1989).

0.5 Both these options are untenable. While the first strategy would only intensify the conflicts between the state and poor peasants and tribals and further impoverish the latter, the second strategy would only accelerate the process of ecological degradation. This paper rejects both these extreme options (of only state control and no state control respectively) in favour of a strategy which would synthesize ecological security with the equally critical imperative of the livelihood security of the many millions of tribal and peasant households dependent on forest resources. However, in emphasizing the social roots of ecological failure, we stress the urgency of institutional reforms in forest administration. For a system of forest management appropriate to a democratic, socialist nation in the late twentieth century must perforce be very different from that which operated in a British colony of the late nineteenth century. This new strategy would rest on two planks: the reform of the policing orientation of the forest department towards a more participatory approach, and the design and creation of local level institutions for sustainable resource management.

0.6 This paper views ecological security and livelihood security as objectives which can and must be made compatible (cf also Sharma, 1986). The text of the paper deals sequentially with the terms of reference of this committee, which are:

1. To examine and define, in the National context, the ecological role of forests and the manner in which this should be achieved;

2. To formulate a conceptual frame-work for forest protection and conservation in the country ;
3. To examine the implementation aspects of the Forest (Conservation) Act, 1980 and the National Forest Policy, 1988 with a view to fulfilling the need for conservation as well as the developmental aspiration of the people especially those living in and around forest areas ;
4. To propose an implementation strategy and the institutional arrangements including public support systems required for this purpose.

1. TO EXAMINE AND DEFINE, IN THE NATIONAL CONTEXT, THE ECOLOGICAL ROLE OF FORESTS AND THE MANNER IN WHICH THIS SHOULD BE ACHIEVED :

1.1 Forests, in the most natural sense of species rich plant communities developed through natural ecological processes and effectively covering the ground with leaf litter and a herb layer or leaf canopy, are vital to the ecological security of any country for a number of reasons :

- (a) Protection of the soil mantle against erosion.
- (b) Regulation of flow of water into streams, rivers and lakes.
- (c) safeguarding biological diversity.

Apart from these it is possible that forests play a significant role in the natural precipitation cycle both through their contribution to atmospheric moisture by transpiration and modulation of the albedo. There is however inadequate evidence to be certain of this role in the context of a monsoonal country like India.

1.2 It is evident that global deforestation, currently estimated at an annual loss of 11 million hectares of tropical forest plus substantial damage to temperate forests through acid rain, has serious worldwide implications. These include a loss of biological diversity likely to be as high as 2.5 million out of 10 million species of living organisms over the next decade. It could also add to the already soaring CO₂ content of the atmosphere as this forest biomass is oxidized and exacerbate the green house effect threatening to lead

to global warming and possible melting of ice caps and a rise in sea level. We must add to this the continual addition to desertified areas at the rate of 6 million hectares per year, annual loss of 20 billion tonnes of topsoil through erosion, acidification of thousands of lakes and pollution reaching down to ground water. Obviously, global ecology is in danger and needs serious attention (IIED and WRI, 1987).

1.3 Deforestation is of all the greater ecological significance in a tropical country with a monsoonal climate such as ours. Our soils tend to be fragile and nutrient poor with most of the nutrient capital locked up in the plant material. Our rainfall is concentrated in a few bursts with long periods of drought. Loss of vegetation cover therefore is far more disastrous for us than would be the case, say for American prairies or pine forests. The magnitude of this disaster may be gauged from the following statistics relating to country's soil and water regime (CSE, 1985) :

(a) Among the sixteen major rivers of the world experiencing most severe erosion in the continent are five Indian rivers, namely Ganga (2nd), Brahmaputra (3rd), Indus (5th), Irravady (9th) and Kosi (12th).

(b) The silt and load of the upper tributaries of Ganga ranges from 8.5 ham/ to 14.25 ham / 100 km².

(c) Many reservoirs in India are losing storage capacity at rates exceeding 0.5 % to 1.5 % per year.

(d) Over 59 million ha in the country is affected by floods, and annually 11.9 million hectares are inundated including 5.4 million ha of cropped lands.

(e) Flood prone areas have been climbing up from 19 million ha in 1960, to 23 in 1970, 49 in 1980 and 59 in 1985 (CSE, 1985) (Fig. 1).

(f) A long term study of discharge in the Gaula river in Kumaon has shown a progressive decrease in the discharge of more than 40% of springs in the catchment area (Fig. 2) (Valdiya, 1988).

1.4 Our natural biological communities also harbour a wealth of biological diversity. This includes perhaps 200000 species of animals and 45000 species of plants, 15000 of which are flowering plants, a good proportion of them confined to India, especially the southern Western Ghats. These include wild relatives of many cultivated plants such as mango, jackfruit, banana, citrus, pepper, turmeric, legumes, jowar, millet, sugarcane and rice. With closed canopy forest only around 12.3% of our land mass, and truly undisturbed biological communities now confined to a few remote islands in Andaman and Nicobars, this biological diversity is under great threat. Hundreds of wild varieties of mangoes have probably already been exterminated through extraction by the plywood industry and almost every one of the varieties of rice in India would probably go to the wall by the end of this century (Chopra and Khoshoo, 1986). Having exhausted the rich evergreen forests of Western Ghats, the commercial exploitation is now reaching out to the remotest areas of northeast and Andaman and Nicobar islands (Saldanha, 1989). Saving this biological diversity is critical to long term health of our agriculture. Thus in 1970's when the grassy stunt epidemics destroyed more than 116 thousand hectares of rice in Asia, the gene for resistance was finally discovered in a

ਭਾਰਤ ਦੀ ਫ਼ੀਮ (million hectares)

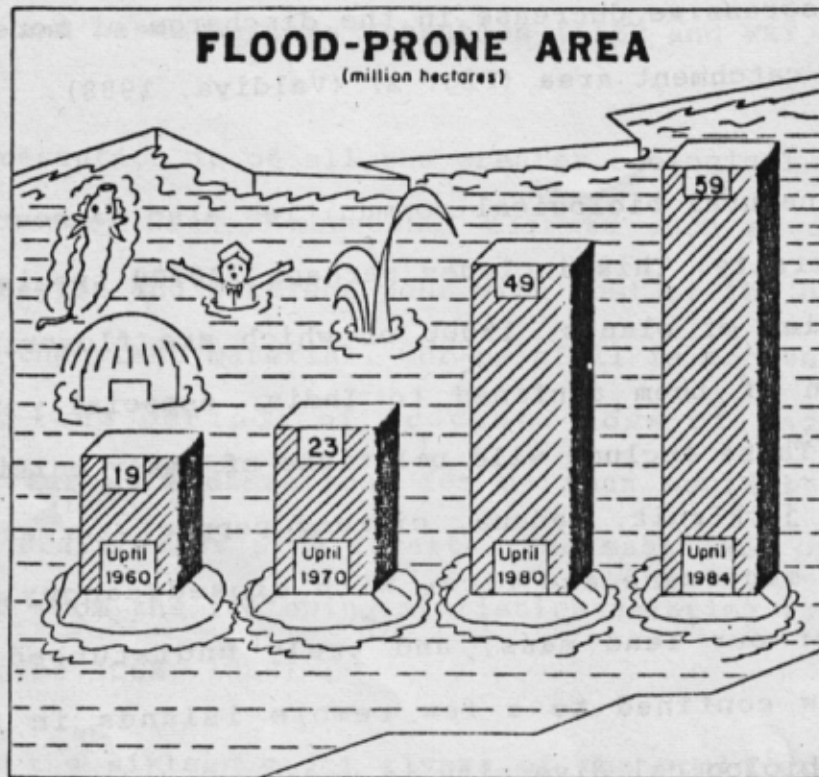
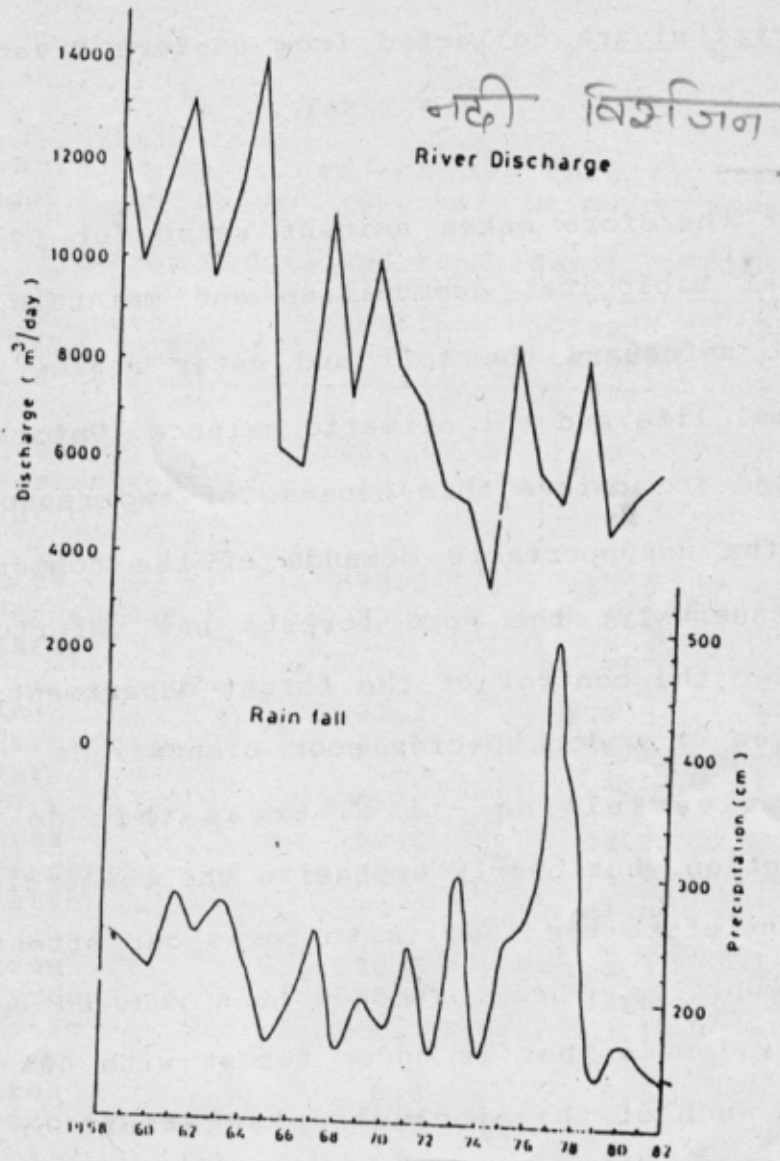


Fig. 1

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Decline in the discharge of the Gaula river resulting from progressive decrease in the discharge of more than 40% springs in the catchment area. (From Bartarya⁷).

Fig. 2

wild rice, Oryza nivara collected from eastern Uttara Pradesh (CSE, 1985).

1.5 It therefore makes eminent sense for us to protect and nurture natural biological communities and maintain the ecological processes that safeguard the soil and water regime, the variety of plant and animal life and the climatic balance. Unfortunately we have miserably failed to achieve this because of two reasons : population pressure and the unsupportable demands of the commercial-industrial sector. Simultaneously, the word forests has unfortunately come to imply land under the control of the forest department, much of which is either barren or under species poor plantations, often raised by resorting to clearfelling - i.e. areas that do not serve the ecological function, but overly emphasize the commercial function. In this context therefore the need is to focus our attention on natural biological communities. These have now been reduced to far less than 12.3% of our land mass that is under forest with 40% or more of the canopy , since much of this includes plantations or substantially disturbed communities (FSI, 1988). In fact it is below even 3.3%, the area under nature reserves (Rodgers and Panwar, 1988). Truly natural climax communities now occur perhaps only on a few small remote islands of the Andaman and Nicobar group. Table I summarises the best available information in this regard based on the vegetation maps prepared by the French Institute.

TABLE I

Extent of potential area, closed canopy forest, forest including degradation stages, and nature reserves in major zones over India.

(After Gadgil and Meher-Homji, 1986)

Zone	Attributes	Potential	Closed canopy	All forest	Nature Reserves
Arid	Area ^a	481.3	0	2.2	8.2
	Percentage ^b	17.2	0	0.1	10.0
	Ratio ^c	-	0	0.006	0.6
Semi-arid	Area	670.0	17.6	31.4	7.8
	Percentage	23.9	5.1	6.7	9.6
	Ratio	-	0.21	0.28	0.4
Peninsular deciduous	Area	1291.2	195.5	283.3	50.0
	Percentage	46.1	56.6	60.7	61.6
	Ratio	-	1.23	1.32	1.34
Peninsular evergreen	Area	62.0	14.1	16.4	3.6
	Percentage	2.2	4.1	3.5	4.4
	Ratio	-	1.86	1.6	2.0
Himalaya	Area	290.5	112.3	129.0	10.9
	Percentage	10.4	32.6	27.7	13.4
	Ratio	-	3.13	2.66	1.29
Andaman and Nicobar	Area	6.8	5.5	5.5	0.8
	Percentage	0.2	1.6	1.3	1.0
	Ratio	-	8.0	6.5	5.0
Total	Area	2801.8	345.0	467.8	81.2
	Percentage ^d	-	12.3	16.7	2.9

^a 1000s km²

^b % of total area in that column

^c % of actual to potential habitat

^d % of total area

1.6 The magnitude of our national problems of soil erosion, siltation of reservoirs and river beds, floods and droughts, and of depletion of biological diversity is thus clear enough. What is now needed is a strong, determined effort to maintain and restore as much as possible of our biological communities in a state as close to their natural composition as possible. It is difficult to quote and defend an aggregated and arbitrary figure such as 33% in this connection. Remarkably enough, this figure was arrived at on the basis of the following very weak logic (Ministry of Food and Agriculture, GOI, 1952) :

// "Viewed against the temperate climate, even distribution of rainfall, and its industrial bias, Europe provides a valuable guide for the proportion of forests that we might well adopt. In India, where we have to reckon with an oppressive tropical sun, desiccating hot winds, periodic monsoons, steep mountain slopes, a lower forest productivity, and a predominantly agricultural population, a proportion somewhat higher than that of Europe would appear to be indicated. From practical considerations, however, we might, for the present, be content with a considerably lower percentage. We should aim at increasing the over-all percentage of area under forest to a minimum of 33-1/3".

1.7 It is far better to view the situation in a location specific context in terms of topography, soils and rainfall, and local subsistence requirements and ensure that natural biological communities are well distributed and cover essentially all of the non-cultivated and non-inhabited tracts. Since 100 million ha under

agriculture ought to really meet all our food needs and another 20 million ha serve for human settlements, the balance of 200 million ha, i.e. 60% of country's land surface could ideally be under natural biological communities. However, this is not possible given our large population and the need for biomass for subsistence as well as for commercial purposes. The commercial needs which could remain under 50 million tonnes in foreseeable future could be met by as little as 3 million ha under intensive tree crop cultivation, or at most 10 million ha if marginal lands are used (FSI, 1988). The subsistence demands may be of the order of 150-200 million tonnes of fuelwood of which around 60 million tonnes may come from crop wastes such as cotton sticks and 600 million tonnes of fodder of which 370 million tonnes may come from crop by products such as jowar straw (Planning Commission, 1989). There are of course other subsistence needs such as thatch for huts, bamboos and small timber and leaf manure for agriculture that have not been quantified. All of this would total to 400 to 500 million tonnes a year. Marginal lands today under agriculture but much better put to perennial plant cover must of course be first used for this purpose (Vohra, 1989). We may have at our disposal 30-40 million ha of such land and at 5-10 tonnes/ha/year of production this may meet perhaps 50-60 % of this requirement. Still another 200 million tonnes or so of biomass would have to be produced from public lands; this would require another 30 to 40 million ha or so of land. This would have to come partly from gomal lands and C and D class revenue lands; but these are not enough and degraded forest lands to the tune of 20 to 30 million ha would also have to be devoted to this purpose.

1.8 Fortunately it should be technically possible to organize the biomass production on these 60 to 80 million ha of land in a fashion compatible with ecological security. Fulfillment of subsistence requirements never need call for tree felling. Indeed villagers only lop small branches for fuel and meet most of their structural needs with the help of plants like bamboos (ASTRA, 1982). They of course have many other specialized requirements too, such as detergents, insecticides, medicines and fruit and leaves as food. All of these can be met from a diverse natural vegetation without resorting to any tree felling. Thus in Sirsi taluka, of Karnataka Western Ghats people regularly use as many as 120 species from natural forests for a variety of subsistence uses. Of these use of only 40 species involves use as wood for house construction or for production of agricultural implements; the other 80 species are strictly used for non-wood produce. Now these wood requirements are very small, and could be met from a few fast growing trees such as Eucalyptus raised on farm bunds. The bulk of subsistence biomass requirements can then safely come from natural diverse vegetation specially developed on marginal farmland, degraded forest lands or revenue and pasture lands dedicated to this purpose.

1.9 The 100 million ha devoted to intensive agriculture, upto 10 million ha to commercial tree plantation, 80 million ha to subsistence biomass production with diverse natural communities and 20 million ha for habitation would leave 110 million ha to natural biological communities, for maintenance of watershed values and conservation of biodiversity. Of this around 50 million ha would of course be desert scrub, sand dunes or alpine pastures and other areas above tree line.

But these too are live ecosystems with their own biological communities. This should be our ideal, of developing natural, diverse communities over 190 out of 320 million ha or 60% of our land. We believe that this is what we should purposefully strive towards if we wish to survive as a nation in the long run.

1.10 It is of critical importance that in these efforts we harmonize the imperatives of ecological security with the basic needs of human populations living around protected areas. As early as 1977, the late Dr. Salim Ali had pointed out :

"No conservation laws or measures can succeed fully unless they had the backing of informed public opinion, which in our case means the usually illiterate village cultivator. In other words, unless we can make the villager understand, and convince him of the logic in expecting him to preserve the tiger or leopard that has deprived him of maybe his sole worldly possession - the cow which moreover provided the meagre sustenance for himself and his family - how can we induct his willing cooperation ? Similarly, how can we expect him to see any sense in being asked not to destroy the deer or pig that have ravaged the crops which he toiled for months to raise, and on which all his hopes are banked ? Admittedly this is going to be a very difficult task, but I believe it is not impossible if we could but find the right approach. We have really never tried enough. Devising a realistic strategy is now a challenge to all conservationists."

The doyen of Western conservation biologists, Raymond Dasmann, has recently echoed the same sentiments : "One of the more hopeful

changes that has taken place in recent years has been the interest taken in the state of human wellbeing by those who were previously concerned mostly with the fate of wild species of animals and plants, and with environments relatively untouched by human activity". As Salim Ali and Dasmann point out, the long term goals of ecological security can never be achieved without simultaneously attending to the needs of local populations (Salim Ali, 1977; Dasmann, 1988). The guidelines drafted at the World National Parks Conference, held in Bali in 1982, also emphasized the provision for "long term positive interactions" between protected areas and the people and communities living adjacent to these areas. The Conference highlighted the use of local knowledge both for conservation and in the avoidance of conflict, local involvement with the planning, management and conservation of protected areas, and the use of protected areas to safeguard threatened tribal cultures. It observed : "Every effort should be made to achieve the desired conservation objective with minimum disruption of traditional ways of life and maximum benefit to local people. A simple conservation rule that has local adherence and support may accomplish more than a national park that has not." (quoted in Dasmann, 1985).

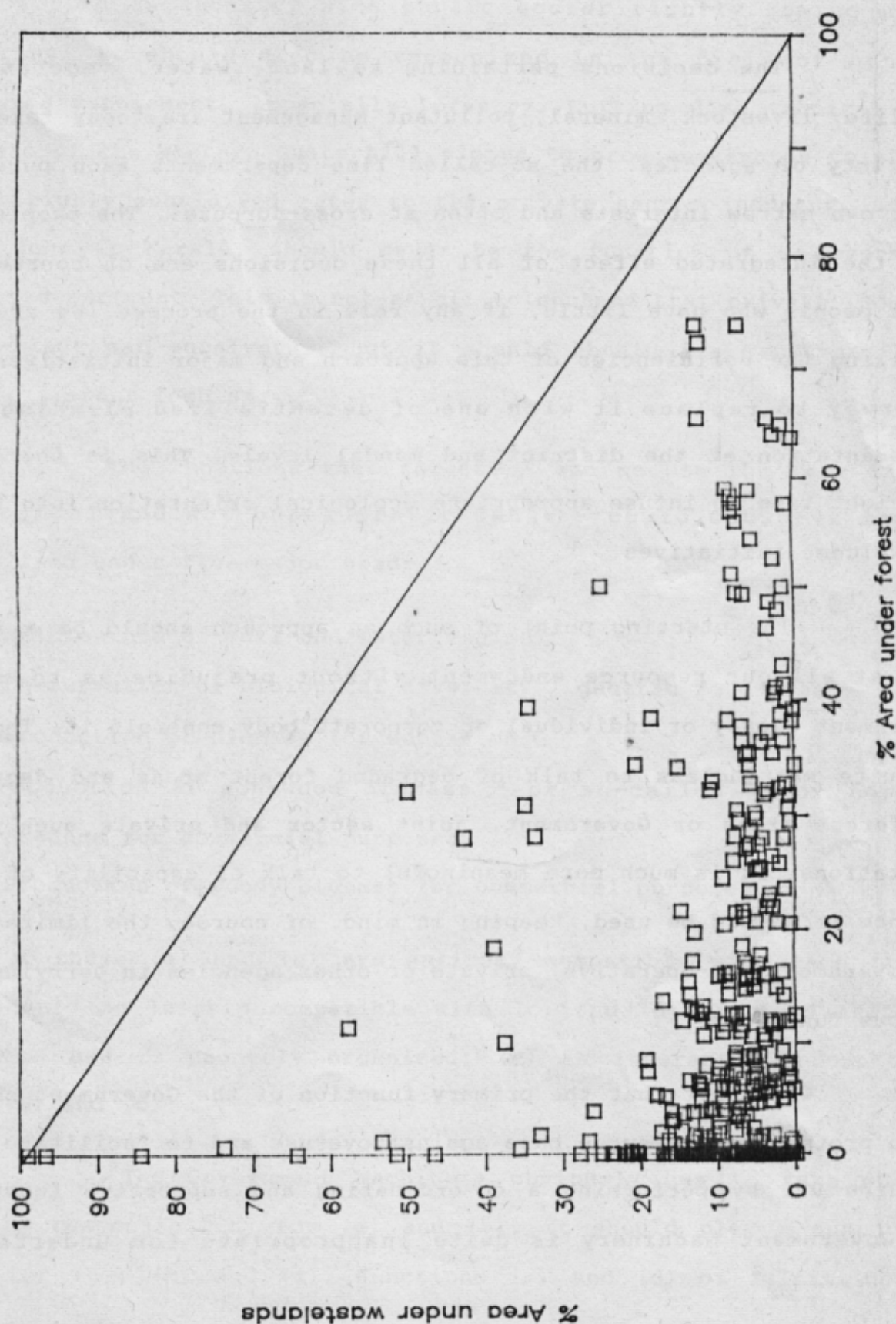
2. TO FORMULATE A CONCEPTUAL FRAME-WORK FOR FOREST PROTECTION AND CONSERVATION IN THE COUNTRY

2.1 The need to safeguard the ecological security of the country by maintaining substantial tracts of land under natural biological communities with closed ground cover has therefore to be an important element of our country's development policies. Simply stated this is the imperative of the natural economy of survival for our society as a whole. But this has to be achieved in the context of two other imperatives; that of the moral economy of provision for nearly half of our people who live below the poverty line and the political economy of profit that motivates the elite of the country, making up one eighth of the population. The bulk of our population below the poverty line in rural areas own little or no land. For them non-cultivated lands, be they forest or wastelands are vital to quality of life. There has been no proper accounting of the proportion of our population that is thus intimately dependent on public lands. We have therefore attempted a simple minded exercise. We know from studies of districts in Western Ghats, Himalayas or Western Rajasthan that in these areas where forests plus wastelands account for 75 % or more of the land, the entire rural population and their livestock is dependent on them in very many ways (Planning Commission, 1989). On the other hand, in districts in the heart of Gangetic plains with forests and wastelands accounting for less than 10% of the land, people meet most of their biomass needs from agricultural by-products, including dung. We may then assume as nil the dependence of such a rural population on public lands. Where the picture is intermediate, we have hilly or dry tracts in the district on which a good proportion of rural populations

does depend. Since we have no detailed information, this proportion is best estimated by extrapolation. We have used this method along with data on 365 districts covering the entire country put together by the Fuelwood and Fodder Study Group of the Planning Commission to estimate the numbers of people and livestock of the country intimately dependent on public lands. As fig. 3 shows these people and their livestock are especially concentrated either in the very arid regions with low forest and large wastelands or in the hilly tracts often with higher forest cover. Our estimate of these numbers is 9.65 crore people, 3.66 crore cattle, 1.11 crore buffaloes, 1.23 crore sheep and 2.01 crore goats. This is about 1/6th of our rural population and about 1/5th of our livestock population. This is of course a crude, conservative estimate, but it brings out the fact that a very substantial proportion of our population perforce depends intimately on the health of public lands, the bulk of which are controlled by the forest department. The moral economy of provision has to specially cater to at least these many people; equalling if not exceeding in number the elite involved in the political economy of profit. It is only when we could balance the moral and political economies, would we be in a position to secure the natural economy of survival for the society as a whole.

2.2 Two major shortcomings of the way natural resources (including forest resources) are currently managed militate against their effective use to fulfill the twin functions of ecological security and livelihood security along with furthering our development objectives. These are :

Fig. 3



Land use pattern for 365 districts covering the country (statistics based on NRSA maps).

(a) Overly bureaucratized, centralized control over resources with no voice to the local people in the management of resources.

(b) The decisions pertaining to land, water, vegetation, wildlife, livestock, mineral, pollutant management are today taken by a variety of agencies, the so-called line departments each pursuing their own narrow interests and often at cross-purposes. The people who feel the integrated effect of all these decisions are of course the local people who have little, if any role in the process. We are now realizing the deficiencies of this approach and major initiatives are underway to replace it with one of decentralized planning and implementation at the district and mandal levels. This is therefore the right time to infuse appropriate ecological orientation into these new welcome initiatives.

2.4 The starting point of such an approach should be a fresh look at all our resource endowment without prejudice as to which Government agency or individual or corporate body controls it. Thus it is quite meaningless to talk of degraded forest areas and degraded non-forest areas or Government, joint sector and private eucalyptus plantations. It is much more meaningful to talk of capability of land and how it should be used, keeping in mind, of course, the limitations of Government, co-operative, private or other agencies in carrying out various functions.

2.5 We submit that the primary function of the Government should be to protect the resource base against overuse and to facilitate good resource use by performing a co-ordinating and supportive function. The Government machinery is quite inappropriate for undertaking

economic, productive functions. This is now increasingly recognized in fields such as industry with public sector rightly coming under scrutiny. It should also be recognized in the field of natural resource management, especially forestry. Cutting down tropical rain forests of the Western Ghats hill slopes to grow eucalyptus to supply it at highly subsidized rates to the private sector industry, as has been done in Kerala, should never be the function of a Government forest department. This is not at all to contend that private industry should not get eucalyptus. But it should obtain its resources in a very different fashion.

2.6 The functions that forests - and we use the term in the biological and not bureaucratic sense - could subserve may be classified under five major heads :

- (a) Maintenance of soil and water regime
- (b) Conservation of biological diversity / genetic resources
- (c) Production of biomass for subsistence
- (d) Production of non-wood biomass - or so-called minor forest produce for commercial purposes
- (e) Production of woody biomass for commercial purposes.

Of these (a) and (b) are entirely compatible with each other; they could be largely compatible with (c) and (d) provided that the resource use is properly organized; (e) is inherently incompatible with (a) and (b).

2.7 The Government machinery obviously has to take on the primary responsibility for (a) and (b), it should play a supportive role for (c), (d) and (e). Functions (c) and (d) of fulfilling the

subsistence needs or providing the basis for the economy of tribals, landless and artisans should be the primary responsibility of local community level institutions with support from the Government machinery. Function (e) should be performed through establishing appropriate linkages between private landholders and urban-industrial consumers with technical support of Government agencies.

2.8 This envisions a much broader supportive co-ordinating role for the Government machinery. This role importantly includes taking an integrated view of the whole resource base discarding sectoral views of bureaucratic control. Such a function would have to be organized at a hierarchy of levels by reorienting and revitalizing the currently inactive land use boards at the state and central levels. We suggest the following hierarchical levels :

- (a) Country as a whole
- (b) Agroecological zones of the country that may cut across states. Districts could be the units of such zones.
- (c) Districts
- (d) Agroecological zones within the district with tahsil / taluk as the unit of such zones.
- (e) Mandals; these would be clusters of hamlets / villages
- (f) Hamlet, relatively homogeneous social group with spatially contiguous habitation.

Of these, mandals, districts and the nation are existing administrative units; to this we suggest the addition of three intermediate units to take cognizance of the social / ecological realities of great relevance in planning of resource use.

2.9 At the most basic level, that of the hamlet the responsibility should devolve on the entire gramasabha with support of the Government officials and local educational institutions. At other levels appropriate machinery has to be created involving people's political representatives, Government officials, technical experts, local educational institutions and voluntary agencies as well as a few direct representatives of the weaker sectors of the population more intimately dependent on the common property resources. This machinery should perform several functions at each level of hierarchy :

- (a) Attempt to match land use to land capabilities as far as possible
- (b) Ensure protection of soil, water and biological diversity in long term national interests
- (c) Help work out and disseminate technological packages of sustainable and efficient resource use
- (d) Help develop social institutions which could actively participate in the process of responsible resource use
- (e) Help in economic activities relating to production, processing and marketing to ensure that benefits do reach all the way to weaker segments of the society.

2.10 Two issues, namely of appropriate institutions to ensure effective local level participation in responsible resource use and to ensure that benefits do reach down all the way to weaker segments of the society merit further examination. It is clear that it is the local community whose long term personal interests are tied to the

health of the resource base, and therefore would take best care of it provided that it is enabled to do so. Unfortunately today the institutional set-up does not facilitate this, and therefore needs to be changed. The preconditions for the local community taking effective, responsible action include :

- (a) Assurance that members of the community would themselves reap benefits of an improvement in the availability of resources in future if they continue to behave responsibly.
- (b) Authority to regulate irresponsible behaviour of members of their own group by imposition of appropriate penalties
- (c) Authority to check exploitation by outsiders
- (d) Safeguards against a small number of powerful people within the local community usurping the resources at cost of others.

2.11 In pre-British India there were a number of village, tribe or caste based co-operative bodies which could and did function effectively in managing natural resources because these pre-conditions were fulfilled. The deliberate encroachment of the state in the British times led to their collapse; and by independence only a few were still functional. It would have been expected that they would be revitalized following independence in the new context of an egalitarian, secular society no longer accepting a hierarchical caste structure. No such revival has occurred for a variety of reasons, in particular, because :

- (a) Political processes have created rivalries and factions within the village societies
- (b) Processes of economic development have often tended to increase disparities and concentration of power in the hands of an elite.
- (c) Increased pace of commercialization has strengthened the motivation for making a quick buck by liquidating the capital of natural resources.
- (d) Enhanced pace of draining away of natural resources from hinterlands coupled to population growth have created stresses within the rural societies
- (e) The state apparatus of independent India has refused to surrender any genuine authority to local communities over their natural resource base.

2.12 Credit goes to one or the other of these forces for the many failures of co-operative bodies at village / tribe level. We must take these realistically into account and safeguard against them in developing appropriate community level institutions. There is however no reason for despair. A recent, authoritative study of co-operatives, which draws on intensive studies in Asia, Africa and Latin America, clearly demonstrates the institutional preconditions for success in the cooperative sector. The study distinguishes between the blueprint approach, in which cooperatives are set up by a bureaucratic machinery through a top-down model, and the greenhouse approach, which by contrast fosters and nurtures local initiatives. Thus while earlier Community Development Programmes in Asia and Africa were unsuccessful

because they were run on bureaucratic lines, cooperatives which emerged from below, through the initiatives of the producers themselves, have often been strikingly successful. These include sugar cooperatives in Maharashtra and milk cooperatives in Gujarat, both of which have enormously increased productivity and income among all classes of farmers. In such successful cases, while the cooperatives were created by farmer or non-governmental organizations, the government helped with finances and facilitative legislation. The key lesson, therefore, is that while local initiative is one critical ingredient, equally critical to the success of a cooperative is the sympathetic and tolerant attitude of the Government (Attwood and Baviskar, 1988).

2.13 In the field of natural resource management, another major work by a World Bank expert (Wade, 1988) has studied the highly sophisticated cooperative mechanisms for water management in the villages of Andhra Pradesh. Wade shows that a number of villages have crafted institutions for the management and distribution of canal water, both between and within villages. These institutions, which appoint their own supervisory staff and have the power to impose fines on offenders, have widespread acceptance among the villagers. While these institutions represent an innovative peasant response to modern technology (i.e. canal irrigation), other studies have highlighted the variety and sophistication of traditional, local level institutions for water management. Thus tank, well and surface irrigation systems, owned and managed by local communities, continue to operate, with significant success, in many parts of India (Appadurai, 1986;

Sengupta, 1985). These studies all demonstrate that given a mix of local initiative and government support, cooperative institutions for natural resource management have a high chance of success. Indeed, even in the field of forestry, historical and anthropological research is now documenting the network of sacred groves and village forests that once covered large parts of the subcontinent (Guha 1989; Gadgil and Guha, in press).

2.14 A key element is, of course, appropriate, adequate Government support, especially in terms of conferring adequate authority on the community level institutions. Such devolution of authority has been fraught with difficulties, even in the case of such well known successes as the hill resources management programme in the Shivalik hills of Haryana. This programme began with the village of Sukhomajri in the catchment of the Sukhna lake which supplies water to the city of Chandigarh. People of this village agreed to voluntarily control grazing in the watershed in return for irrigation water from a small dam built in catchment. The success of the social fencing was followed by addition of many programmes including the constitution of hill resource management societies, revegetation and erosion control schemes, rope making from bhabar grass, fuel efficient stoves, bee keeping, fisheries and an equitable sharing of irrigation water. Despite these successes and the wide publicity, the authority of the hill resource management societies of local communities has never been clarified and set down in black and white. These societies have so far been given rights to the bhabbar grass by paying the Government at rates based on earlier years' open auctions. The society in turn sells the grass to its members who derive incomes substantial for their

standard of living by making ropes from the grass. Now, suddenly the Government is contemplating making over all the bhabbar grass to a paper mill, undoubtedly at highly subsidized rates. Furthermore, Government has started fencing some areas earlier protected without physical fencing by the villagers, raising in their minds doubts as to whether all these resources would suddenly be taken away.

2.15 The remarkable success of Village Protection Committees (VPCs) in West Bengal provides a most hopeful instance of how a reorientation of Government policy towards a more participatory approach can have very positive consequences. In 1972, the Forest Department of West Bengal recognized its failures in reviving degraded sal forests in the southwestern districts of the state. Traditional methods of surveillance and policing "led to a complete alienation of the people from the administration", resulting in frequent clashes between the Forest Department and villagers (West Bengal Forest Department, 1988). Accordingly, the Forest Department changed its strategy, making a beginning in 1972 in the Arabari Forest Range of Midnapore district. Here, villagers were involved in the protection of 1272 hectares of badly degraded sal forests. In return for help in protection, villagers were given employment in both silvicultural and harvesting operations, 25% of their final harvest, and allowed fuelwood and fodder collection on payment of a nominal fee. With the active and willing participation of the villagers, the sal forests showed a remarkable recovery - by 1983, a previously valueless forest was estimated to be worth 12.5 crore rupees.

2.16 Following the success of the Arabari scheme, Village Protection Committees were started by the Forest Department in other areas. By 1988, there were 659 VPCs covering 86,658 hectares in the districts of Midnapore, Bankura and Purulia. In Purulia, as much as 28% of Forest Department land is covered by the VPCs. The VPCs have been most successful where the forest to household ratio is high - i.e. where the dependence on forests for livelihood security is the greatest. Another reason for the success of the VPCs has been the prompt action by the Forest Department on complaints by villagers concerning illegal harvesting by outsiders. While the regrowth of these predominantly sal forests has been impressive, other trees like mahua, kusum, amla, neem and karanj have also benefited from villager-Forest Department protection and cooperation. This regrowth has also generated spin off economic benefits like tassar silk cultivation and oilseeds collection. However, no commercial timber harvesting is allowed in these forests.

2.17 We may highlight four features of the success of the VPCs in southwestern Bengal.

First, no additional funding has been required for these schemes. In fact, Forest Department employees have devoted considerably less time and effort to organizing VPCs than they devoted previously to policing. This is a sharp pointer to the future direction of Forest Department-villager relations in the rest of the country.

Secondly, the benefits of VPCs have cut across both ethnic and political boundaries. VPCs have been successfully formed in villages with tribal, non tribal and mixed populations, as well as in villages owing allegiance to the Congress(I), CPM and Jharkhand parties.

However, it may be noted that with 30-40% of the population of Scheduled Caste and Scheduled Tribe origin, the VPCs are benefiting traditionally disadvantaged sections earlier bypassed by the forest administration.

Third, as the scheme has been successfully extended to several hundred villages it cannot be said to be an isolated example or a flash in the pan. Rather, it has been tried and successfully tested in a variety of situations.

Fourthly, the experience of the VPCs points to a qualitatively new relationship between the Forest Department and local people. While the West Bengal Forest Department is still in effective control, it has shown a great willingness to share power, authority and economic benefits with the villagers. There has been a significant change in the attitude of the forest officials, with a cooperative relationship being established with the villagers in place of the hierarchical relationship which previously existed (West Bengal Forest Department, 1988; Stewart, 1988).

2.18 It is in this cooperative relationship between the state and local people that the future direction of forest administration lies. Indeed, it is the only feasible option for meeting the twin objectives of ecological security and livelihood security, while it would also reduce (and in the long run eliminate) the wasteful conflicts between villagers and the Forest Department. A participatory approach to forest management would also be in keeping with worldwide trends in development thinking. To quote the Coyococ Declaration of the United Nations Environment Programme (1981) and the United Nations Commission

on Trade and Development:

We are still in a stage where the most important concern of development is the level of satisfaction of basic needs for the poorest sections in each society which can be as high as 40% of the population. [But] development should not be limited to the satisfaction of basic needs...Development includes freedom of expression and impression, the right to give and to receive ideas and stimulus. There is a deep social need to participate in shaping the basis of one's existence, and to make some contribution to the fashioning of the world's future. Above all, development includes the right to work, by which we mean not simply having a job but finding self-realization in work, the right not to be alienated through production processes that use human beings simply as tools.

2.19 We suggested above in section 2.6 that the forest lands of the country (in the natural, not bureaucratic sense) would have to meet five functions of soil and water conservation, conserving biodiversity, production of biomass for subsistence, production of MFP for commercial purposes and production of woody biomass for commercial purposes. We believe that the first four functions could be made largely compatible with each other by appropriate management strategies.

2.20 A part of our land must of course be left totally inviolate, devoted to conservation. Today India has 24 national parks totalling 2.1 million ha or 0.6% of the land area and 372 wildlife sanctuaries with an area of 8.86 million ha or another 2.7% of the land area. However, many of these areas are subject to commercial logging, grazing and other disturbances. Furthermore, they are not uniformly

distributed across the states or biogeographic provinces or biome types leaving some very poorly represented. Reviewing this network, the Wildlife Institute of India (1988) has made a proposal to enhance the protected area network to 15.13 million ha or 4.6% of the country's land area. Their proposed network has been so planned as to give a far better spatial coverage as well as representation of different biogeographic provinces and biome types. We suggest that this proposal be accepted fully and this much of our landmass be fully devoted to nature conservation.

2.21 This basically centralized network of larger nature reserves should be supplemented by a further highly decentralized network of smaller conservation areas based on traditions of sacred groves, sacred ponds, sacred stretches of rivers and sacred trees and animals. Such a network is still playing a vital role in parts of the country such as parts of Western Ghats with its nagarbanas and Aravallis with their orauns. Indeed a species of leguminous climber new to science, Kunstleria keralensis was described a few years ago from a sacred grove in coastal Kerala (Gadgil, 1985). infortunately the larger of such groves have fallen prey to Government sponsored commercial exploitation, others are going before the onslaught of land hunger of peasants. A determined effort should be made to identify and protect all of these along with the network of larger nature reserves.

2.22 The subsistence biomass requirements of our rural people have to be met from a network of community lands which would be totally devoted to the purpose of maintenance of a species rich biological community for meeting the diverse biomass needs of local

people on a sustainable basis. Such lands should not be permitted to be diverted towards any other purpose, or for production of commodities for the market. They should be under joint management of local people and Government officials with guaranteed, regulated access to usufructs to the local people without resorting to tree felling. Revenue and protected forest lands should preferably be used for this purpose; but where necessary reserve forest lands could also be used (Gadgil and Guha, 1989; Planning Commission, 1989). Such decisions should flow out of a decentralized, district level process of land use planning unfettered by any rigid regulations.

2.23 Commercial tree felling and raising of species - poor plantations are practices most incompatible with the ecological function of natural biological communities. These should therefore be totally phased out of all public land, including reserve forest and revenue lands. The needs of wood based industry, which of course will continue, should instead come to be met from tree production on private agricultural lands (Gadgil, 1989). To motivate the farmers to take up such tree farming, however, we need to ensure for all a reasonable return, and for poor farmers some subsistence over the time it takes tree crops to mature. Farmers would never receive a fair price so long as the Government continues to supply wood to industries at a subsidized rate, or permit imports at very cheap prices. Hence, while some wood supply from reserved forests and some imports may have to continue for a few years before they are fully phased out, the element of subsidy should be immediately withdrawn and duties on imported wood or wood pulp so fixed as to render wood production on

Indian farms remunerative. In this sector our aim should be to totally transfer all commercial wood production to private farmlands, especially marginal lands unfit for plough cultivation. Again, scientific investigations fully support such a policy. Thus private farmers have been shown to be much more productive (in terms of tons of roundwood produced per hectare) and cost effective than the forest department when it comes to raising plantations of commercially useful species. As a consequence, if commercial production is fully shifted to private land we would require much less area (perhaps less than one fourth) as compared to the area of natural forest required for the purpose (if we were to continue the traditional system of timber harvesting from forest lands) - this constituting an enormous potential saving of the country's natural endowment.

2.24 While attempting such a transfer of commercial tree production to private lands we should take care to build appropriate institutions for ensuring credit, marketing and reasonable price. For this purpose, Government should stipulate that all wood based industries including apple growing would be required to execute agreements with individual tree producers or tree producers' co-operatives for supply of all the wood required by them at reasonable negotiable prices subject to periodical review. The credit for tree crop production can then flow from the industry, banks or NABARD with some provision to enable the poorer farmers to tide over the gestation period. The Agricultural Produce Marketing Committees could also be involved to ensure fair transactions. Sugar co-operatives of Maharashtra or milk co-operatives of Gujarath may provide useful models for developing tree production through farmers' initiative.

2.25 Here mention may be made of the tragedy of Eucalyptus farmers of Haryana. These enterprising people have developed an excellent wood resource base over the last decade and a half. Unfortunately they have seen prices of eucalyptus which stood at around Rs. 340 per tonne in 1980 fall to about Rs. 190 per tonne in 1989 despite the general price rise. At this level tree cropping is no longer economically feasible for them. Ironically this is happening in a state next to Himachal Pradesh where excellent deodar forests are being destroyed for the manufacture of apple crates. In spite of Haryana offers to provide eucalyptus crates at competitive prices the Himachal Pradesh apple crate lobby has ensured that eucalyptus crates are not accepted. All such situations should clearly be avoided by making it mandatory for apple (or mango or orange) growers to obtain their crates from private tree farmers.

2.26 Apart from the network of fully protected areas covering some 15 million ha of our landmass, and the community lands network which may come to claim some 30 million ha of degraded reserve forests, would be another 30 million ha or so of forest area which could be devoted to the dual function of conservation of watershed and biodiversity values and production of non-wood minor forest produce for the market. These two functions can be made compatible by ensuring that we do not view MFP in a narrow perspective such as tendu leaves or pine resin, but cover these lands with a truly species rich community producing a much wider range - say 100 or so per district - of minor products. Collection of seeds, raising seedlings, planting in the forest as gap planting, collection of MFP, processing of MFP,

transport of MFP and marketing of MFP could all generate vigorous economic activity to support tribal and rural economy. The Government should play a facilitator role in developing forest labour co-operatives or analogous institutions to take full advantage of these opportunities.

2.27 Finally, rural employment generation schemes could be used to very good purpose in this whole endeavour of good management of natural resources. Such schemes should emphasize the creation of permanent, productive resources such as trees, pastures or farm ponds instead of temporary, unproductive assets such as roads that get washed away every monsoon. The schemes should also be available for developing such resources regardless of land ownership constraints, avoiding, of course, their use to merely subsidize rich farmers.

3. TO EXAMINE THE IMPLEMENTATION ASPECTS OF THE FOREST (CONSERVATION) ACT, 1980 AND THE NATIONAL FOREST POLICY, 1988 WITH A VIEW TO FULFILLING THE NEED FOR CONSERVATION AS WELL AS THE DEVELOPMENTAL ASPIRATION OF THE PEOPLE ESPECIALLY THOSE LIVING IN AND AROUND FOREST AREAS :

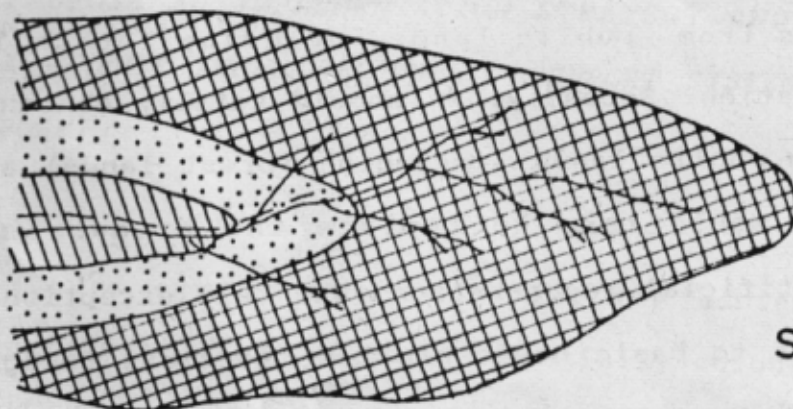
3.1 The need of the hour in India is to maintain as large a proportion of its land under biological communities as close to the natural state as possible, and simultaneously to ensure livelihood security for the masses. While this is in principle recognized by the Forest (Conservation) Act, 1980 and the National Forest Policy, 1988, in practice it gets bogged down by equating control by the forest bureaucracy with ecological security. Although the National Forest Policy talks of the "creation of a massive peoples' movement" as one of its major objectives, the recent amendment to the Forest Conservation Act, by further strengthening state control, is a major impediment to any kind of peoples' participation. In fact, with this amendment even the existing, isolated examples of peoples involvement in forest management (which have been extremely successful from the viewpoints of both ecological security and livelihood security) - e.g. the examples of Sukhomajri in Haryana and Arabari in West Bengal - could be threatened.

3.2 This discrepancy between the policy and the amended act must be removed. For studies by ecologists, anthropologists and historians have demonstrated that state ownership based on the principle of keeping people out of the forest cannot lead to ecological security. Indeed, in many cases the experience has been that foresters have gone

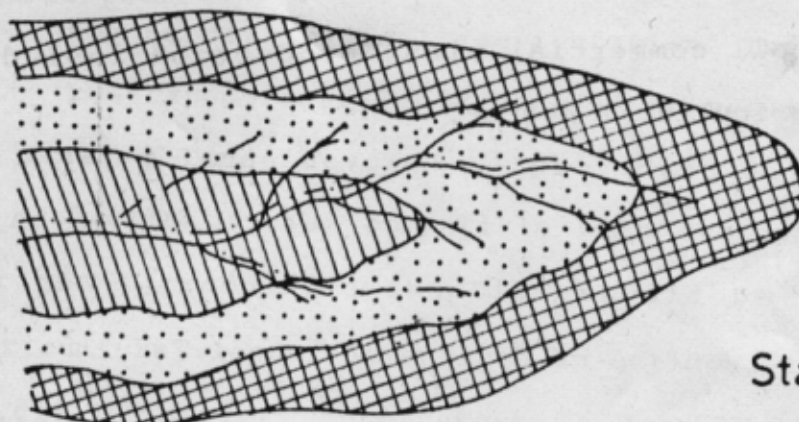
on to clearfell steeper and steeper slopes to raise species poor plantations for paper factories and liquidate precious sacred groves to supply timber for plywood mills (Fig. 4). The recent amendment also permits use of forest lands by a company even if it is only deemed to be controlled by Government. Such control may be equated to no more than the presence of a Government nominee on the Board of Directors. This may open up the way to further diversion of forest lands to commercial use, while at the same time preventing use of forest lands for meeting subsistence needs of tribals or rural people by making them available to co-operatives. This would be tragic, for as stressed above the ecologically most disastrous land use has been and would continue to be that for commercial wood production.

3.3 The forest departments have also shown scant inclination to genuinely involve people in conservation and ecorestoration. The Act has also stood in the way of often genuine development needs such as electric power supply and roads to villages. We therefore need to modify the policy and act so as (a) to promote participation by local people in conservation, ecorestoration and sustainable use of species rich biological communities to meet subsistence needs and (b) to halt the continued degradation of forest lands for securing supplies of raw material for commercial purposes at highly subsidized rates.

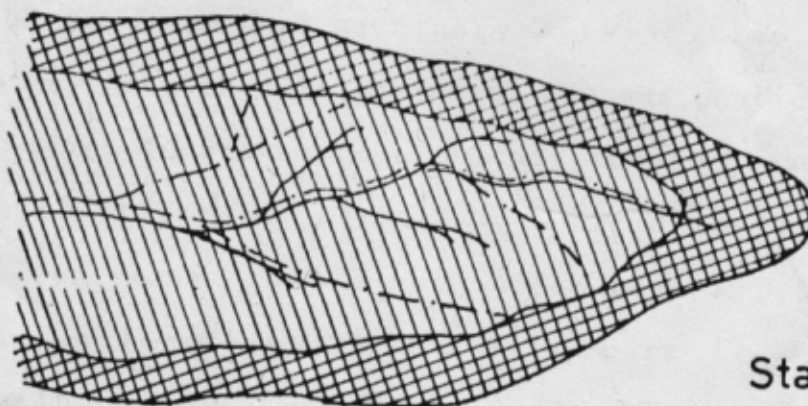
3.4 Both the forest policy and legislation must emphasize the links between eco-restoration and rural (including tribal) development. These modifications would call for institutions to promote positive involvement of local people, especially tribals and the rural



Stage I



Stage II



Stage III

 Protection circle ;
  Selection circle
 Conversion circle ;
 - - - Road ;
 — River

: Successive changes in designation of areas under protection, selection and conversion circles in the Quilon Forest Division of Kerala over the period 1950 - 1980 (after FAO, 1984).

Fig. 4

ministry. This management system should be worked out and implemented on the basis of a detailed decentralized land use planning exercise which would start afresh with land capability rather than the nature of bureaucratic control of land as its starting point. Once an appropriate land use plan, with emphasis on the urgency of ecological security and livelihood security is worked out, then its proper implementation could be organized not as a centralized bureaucratic exercise, but as a location specific, people oriented exercise. This calls for strengthening of the district level planning and administration machinery with higher level controls primarily geared to ensure that the twin considerations of ecological security and livelihood security are given full weightage.

4.2 This separation of objectives, functions and management systems for the three main categories of land use outlined above - fully protected nature reserves, community forests and farm forests respectively - must be the starting point of forest administration. A shift away from state monopoly is an essential precondition for fulfilling both ecological security and livelihood security - indeed, the active involvement of the people is also necessary for alleviating the bitter, wasteful and often violent conflicts between the state machinery and the rural population over access to forest produce. That a healthy forest cover can be brought about only through a close cooperation between government and the villagers was well realized by one of our early nationalist organizations, the Poona Sarvajanik Sabha. Contesting the colonial forest act of 1878 for its excessive reliance on state control, the Sabha pointed out that the maintenance

of forest cover could more easily be brought about by

taking the Indian villagers into confidence of the Indian Government. If the villagers be rewarded and commended for conserving their patches of forest lands, or for making plantations on the same, instead of ejecting them from the forest land which they possess, or in which they are interested, emulation might be evoked between neighbouring villages. Thus more effective conservation and development of forests in India might be secured, and when the villagers have their own patches of forests to attend to Government forests might not be molested. Thus the interests of the villagers as well as the Government can be secured without causing any unnecessary irritation in the minds of the masses of the Indian population.

4.3 Indeed, in many areas non-governmental organizations working among the rural poor have on their own initiated notable programmes of eco-restoration. For example, in the Alakananda valley, the Dashauli Gram Swarajya Mandal (DGSM), the organization which pioneered the Chipko movement, has undertaken afforestation programmes whose rate of success is significantly higher than those conducted by the Forest Department (while the survival rate of saplings in Forest Department plantations varies from 14% to 21%, in DGSM plantations it varies from 68% to 88%!). In heavily eroded landscapes, DGSM volunteers have also successfully taken up soil conservation works. Other examples of successful voluntary eco-restoration efforts include the work of the Bhagavatula Charitable Trust in Yellamachilli in Vishakapatnam district, of the Sahyadri Parisara Vardini in Uttara Kannada district, and of the international community at Auroville (Guha, Prasad and Gadgil, 1984). Surpassing all these of course, has been the

success of Village Protection Committees of West Bengal where the local people and the Government machinery have effectively joined hands to ensure ecological security coupled to livelihood security.

4.4 The thrust of forest policy and act should therefore receive a radical reorientation and should be made a part of a broader policy of efficient land and other natural resource use and active participation of local people in every phase of planning, implementation and monitoring of good resource use.

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